## Claims

1. Machine for the production of a multi-layered fibrous web, in particular a paper web or a cardboard web, in which the layers (A, B; B, C) formed by a corresponding former (10, 12, 34, 38) are couched together, characterized in that at least two layers (A, B; B, C) to be couched together, each having on one side a higher content of fines are introduced into the couching zone (30) in such a way that they come into contact with each other with their sides of higher contact of fines, and in that at least one of these two layers (A, B; B, C) was created by a gap former (10, 12).

2. Machine according to claim 1, characterized in that at least one of the two layers (A, B; B, C) is created by a gap former (10, 12) which comprises two circulating continuous dewatering belts (14, 16) which converge, in forming a headbox nip (18), and which are guided in the area of this headbox nip (18) that is supplied with a fibrous suspension by a headbox (24) over a forming element (20), such as in particular a forming roll.

3. Machine according to claim 2, characterized in that each of the two layers (A, B; B, C) is created by a separate gap former (10, 12) and the sheet formation of each of the two layers (A, B; B, C) occurs with higher content of fines on the forming element side.

4. Machine according to claim 3, characterized in that the web travel directions (L) of the two gap formers (10, 12) are opposite each other.

5. Machine according to claim 4, characterized in that the layer (A; B) created in the first of the two gap formers (10, 12) is guided together with at least one of the two dewatering belts (14, 16) around a deflection element (28), preferably a deflection roll, and then introduced via a continuous belt (16, 36), traveling in the generally

opposite direction to the stream direction of the first headbox (24), into the appropriate couching zone 30 in which the layers (A, B; B, C) created by the two gap formers (10, 12) are couched together with their sides of higher content of fines.

6. Machine according to claim 5, characterized in that the layer (A) created in the first gap former (10) is guided around the deflection element (28) together with the outer dewatering belt (16), which does not come into contact with the forming element (20), and which is introduced into the couching zone (30) via this outer dewatering belt (16).

7. Machine according to claim 6, characterized in that the two dewatering belts (14, 16) are guided around the deflection element (28), and the inner dewatering belt (14) is separated from the outer dewatering belt (16) which entrains the layer (A) following this deflection element.

a 8. Machine according to claim 6 ~~or 7~~, characterized in that the outer dewatering belt (16) of the first gap former (10) consecutive to the deflection element (28) is guided preferably in general in a horizontal direction, at least up to the area of the couching zone (30).

9. Machine according to claim 5, characterized in that another layer (A) is created by a fourdrinier former (34) and the sheet formation of this layer (A) occurs with the higher content of fines on the outer side facing away from the continuous wire (36), in that the layer (B) created in the first gap former (20) and guided over the deflection element (28) is couched together with the layer (A) created by the fourdrinier former (34) and in that these two layers (A, B) are introduced via the continuous wire (36) into the couching zone (30) in which the layers (B, C) created by the two gap formers (10, 12) are couched together with their sides of higher content of fines.

10. Machine according to claim 9, characterized in that the outer dewatering belt (16) of the first gap former (10) is separated in web travel direction (L) in front of the deflection element (28) from the inner dewatering belt (14) and the relevant layer (B), and the layer (B) is guided around the deflection element (28) only together with the inner dewatering belt (14).

a 11. Machine according to claim 9 ~~or 10~~, characterized in that the layer (A) formed in the fourdrinier former (34) and the layer (B) formed in the first gap former (10) are couched together in the area of the deflection element (28) and/or in a couching roll.

a 12. Machine according to claim 1 ~~one of the preceding claims~~, characterized in that, after the separation of the two dewatering belts (14', 16') of the second gap former (12), the layer (B; C) created by the second gap former is introduced together with the outer dewatering belt (16') into the couching zone (30) in which the two layers (A, B; B, C) created in the gap formers (10, 12) are couched together with their sides of higher content of fines.

a 13. Machine according to claim 1 ~~or 2~~, characterized in that the first (A) of the two layers (A, B) to be couched together with their sides of higher content of fines is created by a fourdrinier former (38) and the sheet formation of this first layer (A) occurs with the higher content of fines on the outer side facing away from the continuous wire (40), and in that the second layer (B) is created by a gap former (12) and the sheet formation occurs in this second layer (B) with a higher content of fines on the forming element side.

14. Machine according to claim 13, characterized in that the stream direction of the headbox (24') associated with the gap former (12) correlates in general with the travel direction (LA) of the first layer (A) created by the fourdrinier former.

15. Machine according to claim 13 ~~or 14~~, characterized in that the layer (B) created by the gap former (12) is introduced, after the separation of the two dewatering belts (14', 16') of the gap former (12), together with the outer dewatering belt (16') into the couching zone (30) in which it is joined with the continuous wire (40) for the two layers (A, B) to be couched together.

16. Machine according to ~~one of the claims 13 through 15~~ claim 13, characterized in that the continuous wire (40) is guided at least in the area of the couching zone (30) preferably in a generally horizontal direction.

17. Machine according to ~~one of the claims 13 through 16~~ claim 13, characterized in that at least one additional gap former (44) is provided and the sheet formation of the correlating additional layer (C) occurs with a higher content of fines on the forming element side and in that the additional layer (C) is couched together with the layer (B) created by the first gap former (12) in an additional couching zone (46).

18. Machine according to claim 17, characterized in that the stream direction of the headbox (48) associated with the additional gap former (44) corresponds to the travel direction (LA) of the layer created by the fourdrinier former (38).

19. Machine according to claim 17 ~~or 18~~, characterized in that the additional layer (C) created by the additional gap former (44) is introduced after the separation of the two dewatering belts (50, 52) of the additional gap former (44) together with the outer dewatering belt (52) into the additional couching zone (46), in which it is brought together with the continuous wire (40) for couching together the two layers (B, C) created by gap formers (12, 44).

20. Machine according to claim 19, characterized in that the continuous wire (40) is guided at least in the area of the two couching zones (30, 46) preferably in a

generally horizontal direction.

21. Machine according to ~~one of the preceding claims~~ claim 1, characterized in that for the formation of an at least three-layered or four-layered fibrous web at least one additional gap former (54) is provided and the sheet formation of the additional layer (D) occurs with higher content of fines on the forming element side, and that the additional layer (D) is couched together with the layer (C) created in the preceding gap former in an additional couching zone (56), in which at least one of the two layers (C, D) is couched together with the other layer on a side of higher content of fines.

22. Machine according to claim 21, characterized in that the stream direction of the headbox (58) associated with the additional gap former (54) corresponds to the travel direction of the fibrous web to be created.

23. Machine according to ~~one of the preceding claims~~ claim 1, characterized in that at least one multi-layered headbox and/or at least one single layered headbox and/or a combination of different headboxes is provided.

24. Machine according to ~~one of the preceding claims~~ claim 1, characterized in that at least one single layered headbox is provided.

25. Machine according to ~~one of the preceding claims~~ claim 1 characterized in that uniform pressure dewatering elements are provided for web dewatering.

26. Process for the production of a multi-layered fibrous web, in particular a paper web or a cardboard web, in which the layers (A, B; B, C) each created by a former (10, 12, 34, 38) are couched together, characterized in that at least two layers (A, B; B, C) to be couched together, each having on one side a higher content of fines, are introduced into the couching zone (30) in such a way that

they come into contact with each other on their sides with higher content of fines and that at least one of these two layers (A, B; B, C) is created by a gap former (10, 12).

27. Process according to claim 26, characterized in that at least one of the two layers (A, B; B, C) is created by a gap former (10, 12) which contains two circulating continuous dewatering belts (14, 16) that run together forming a headbox nip (18) and which are guided in the area of this headbox nip (18), loaded with a fibrous suspension by a headbox, over a forming element (20), such as in particular a forming roll.

28. Process according to claim 27, characterized in that each of the two layers (A, B; B, C) is formed by a separate gap former (10, 12) and the sheet formation of the two layers (A, B; B, C) occurs in each case with the higher content of fines on the forming element side.

29. Process according to claim 28, characterized in that the two gap formers (10, 12) are operated in opposite web travel directions (L).

30. Process according to claim 29, characterized in that the layer (A; B) formed in the first of the two gap formers (10, 12) is guided together with at least one of the two dewatering belts (14, 16) around a deflection element (28), preferably a deflection roll, and then via a continuous belt (16; 36) introduced in a direction generally opposite to the travel direction of the first headbox (24) into the correlating couching zone (30) in which the layers (A, B; B, C) created by the two gap formers (10, 12) are couched together with their sides of higher content of fines.

31. Process according to claim 30, characterized in that the layer (A) created in the first gap former is guided together with the outer dewatering belt (16), which does not come into contact with the forming element (28), around the deflection

element (28) and introduced into the couching zone (30) via this outer dewatering belt (16).

32. Process according to claim 31, characterized in that the two dewatering belts (14, 16) are guided around the deflection element (28) and the inner dewatering belt (14) is separated from the outer dewatering belt (16) entraining the layer (A) consecutive to this deflection element.

33. Process according to claim 30, characterized in that an additional layer (A) is created by a fourdrinier former (34) and the sheet formation of this layer (A) occurs with the higher content of fines on the facing away from the continuous wire (36), in that the layer (B), created in the first gap former (10) and guided over the deflection element (28), is couched together with the layer (A), formed by the fourdrinier former (34), and in that these two layers (A, B) are introduced via the continuous wire (36) into the couching zone (30) in which the layers (B, C) formed by the two gap formers (10, 12) are couched together with their sides of higher content of fines.

34. Process ~~according~~ to claim 33, characterized in that the outer dewatering belt (16) of the first gap former (10) is separated in web travel direction in front of the deflection element (28) from the inner dewatering belt (14) and the relevant layer (B), and the layer (B) is guided around the deflection element (28) only together with the inner dewatering belt (14).

a 35. Process according to claim 33 ~~or 34~~, characterized in that the layer (A) formed in the fourdrinier former (34) and the layer (B) created in the first gap former (10) are couched together in the area of the deflection element (28) and/or a couching roll.

a 36. Process according to claim 1 ~~one of the preceding claims~~, characterized in that the layer

(B; C) created by the second gap former (10) is guided after the separation of the two dewatering belts (14', 16') of the second gap former (10) together with the outer dewatering belt (16') to the couching zone (30), in which the two layers (A, B; B, C) created in the gap formers (10, 12) are couched together with their sides of higher content of fines.

37. Process according to claim 26 ~~or 27~~, characterized in that the first (A) of the two layers (A, B) to be couched together with their sides of higher content of fines is created by a fourdrinier former (38) and the sheet formation of this first layer (A) occurs with a higher content of fines on the outside facing away from the continuous wire (40), and that the second layer (B) is created by a gap former (12) and that the sheet formation in this second layer (B) occurs with the higher content of fines on the forming element side.

38. Process according to claim 37, characterized in that the stream direction of the headbox (24') associated with the gap former (12) is selected in general correlating to the travel direction (LA) of the first layer (A) created by the fourdrinier former.

39. Process according to claim 37 ~~or 38~~, characterized in that the layer (A) created by the gap former (A) is guided to the couching zone (30) after the separation of the two dewatering belts (14', 16') of the gap former (12) together with the outer dewatering belt (16'), in which it is brought together with the continuous wire (40) for the couching of the two layers (A, B).

40. Process according to claim 37 ~~one of claims 37 through 39~~, characterized in that at least one additional gap former (44) is used and the sheet formation of the relevant additional layer (C) occurs with a higher content of fines on the forming element side, and that the additional layer (C) is couched in another couching zone (46) together with the layer (B) created by the first gap former (12).

41. Process according to claim 40, characterized in that the stream direction of the headbox (48) associated with the additional gap former (44) is chosen correlating to the travel direction (LA) of the layer formed by the fourdrinier former (38).

42. Process according to claim 40 ~~or 41~~, characterized in that the additional layer (C) created by the additional gap former (44) is introduced, after the separation of the two dewatering belts (50, 52) of the additional gap former (44), together with the outer dewatering belt (52) into the additional couching zone (46) in which it is brought together with the continuous wire (40) for the couching of the two layers (B, C) formed by the gap formers (12, 44).

43. Process according to ~~one of the preceding claims~~ claim 1, characterized in that at least one additional gap former (54) is used for the formation of an at least three-layered or four-layered fibrous web and the sheet formation of the additional layer (D) occurs with a higher content of fines on the forming element side, and that the additional layer (D) is couched in an additional couching zone (56) with a layer (C) created by a preceding gap former, and where at least one of the two layers (C, D) is couched together with the other layer with a side of higher content of fines.

44. Process according to claim 43, characterized in that the stream direction of the headbox (58) associated with the additional gap former (54) is chosen correlating to the travel direction of the fibrous web to be created.

45. Process according to ~~one of the preceding claims~~ claim 1, characterized in that at least one multi-layered headbox and/or at least one single-layered headbox and/or a combination of different headboxes is used.

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